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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/412,097 10/04/99 THOMSEN

J C11.12-0003

EXAMINER

MM91/0119

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ART UNIT

PAPER NUMBER

2858

DATE MAILED:

01/19/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/412,097

Applicant(s)

Thomsen et al.

Examiner

Wasseem H. Hamdan

Group Art Unit

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☐ Responsive to communication(s) filed on _____

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle* 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-16 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims 17-20 are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Part III - DETAILED ACTION

Specification

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-16, drawn to device and a method for timing an engine having a timing port, classified in class 324, subclasses 378, 384, 391, 393, 395, 402, and class 73, subclass 116.
 - II. Claims 17-20, drawn to system to a variable reluctance sensor, classified in class 324, subclasses 174 and 207.25.
2. The inventions are distinct, each from the other because:
 - a. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions using a second substrate.
 - b. Inventions I in a first set and II in a second set are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations

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(MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not include all the details in the subcombination. The subcombination has separate utility such as by itself for its intended purpose See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

3. Claims 17-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected because they are related to variable reluctance sensor. Election was made **without** traverse in Paper No.2. Election was made by Mr. Steven M. Koehler (Registration No. 36,188) on January 11, 2001 in a telephone call.

Title

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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Drawings

5. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
6. The drawings are objected to because box 16 in figures 1, 7, 8, 9 and 10, require descriptive legends. Correction is required.

Specification

7. The sections of the specifications are crowded too closely together. Please Substitute the spaces between the section of the specification with lines one and one-half or double spaced. Example after line 6 on page 1, etc... Correction is required.
8. Lines are crowded too closely together, making reading and entry of amendments difficult. Please Substitute the specification with lines one and one-half or double spaced.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claims 1, 3, 4, 8-10, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630).

Regarding claims 1 and 12, Budde et al. disclose an ignition timing device and method for timing an engine having a timing port, the ignition timing device [column 2: lines 25-44] comprising:

a sensor to provide a timing mark signal indicative of presence of a timing mark [FIG. 4; column 2: lines 45-52];

an ignition sensor adapted to provide an ignition signal indicative of the occurrence of an ignition spark [FIG. 1 - FIG. 3; column 2: lines 33-36];

an indicator receiving the output signal and operable as a function thereof column 8: lines 46-57].

Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal. Richeson, Jr. et al. disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal [Fig. 7; column 14: lines 18-28]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et

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al. by including comparator. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose of providing an output signal indicative of substantial simultaneous occurrence of signals from both sensors [Richeson, Jr. et al.: Column 7: lines 34-67].

Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose variable reluctance sensor. Richeson, Jr. et al. disclose variable reluctance sensor [column 3: lines 45-53]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including variable reluctance sensor. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose modulating the carrier signal [Richeson, Jr. et al.: column 3: lines 45-53].

Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose a sensor securable in the timing port. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. and Richeson, Jr. et al. by a sensor securable in the timing port. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above because such variation is expected and well known in the art. As discussed in MPEP § 2144.04, if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court. Examples directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients

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are discussed below. If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection.

AESTHETIC DESIGN CHANGES:

In re Seid , 161 F.2d 229, 73 USPQ 431 (CCPA 1947) (Claim was directed to an advertising display device comprising a bottle and a hollow member in the shape of a human figure from the waist up which was adapted to fit over and cover the neck of the bottle, wherein the hollow member and the bottle together give the impression of a human body. Appellant argued that certain limitations in the upper part of the body, including the arrangement of the arms, were not taught by the prior art. The court found that matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art.). But see In re Dembiczak 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999)(The claims of a utility application, drawn to a generally round, orange plastic trash bag with a jack-o-lantern face, were rejected under 35 U.S.C. 103. However, the court reversed the rejection for lack of motivation to combine conventional trash bags with a reference showing a jack-o-lantern face on an orange paper bag stuffed with newspapers.); Ex parte Hilton, 148 USPQ 356 (Bd. App. 1965) (Claims were directed to fried potato chips with a specified moisture and fat content, whereas the prior art was directed to french fries having a higher moisture content. While recognizing that in some cases the particular shape of a product is of no

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patentable significance, the Board held in this case the shape (chips) is important because it results in a product which is distinct from the reference product (french fries.).

Regarding claims 3 and 14, Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose means for filtering. Richeson, Jr. et al. disclose means for filtering [FIG. 4 (24); column 4: lines 33-35; column 7: lines 44-49]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including means for filtering. The skilled artisan would have been motivated to modify Budde et al. as because it well known and expected in the art.

Regarding claim 4, Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose variable reluctance sensor. Richeson, Jr. et al. disclose variable reluctance sensor [column 3: lines 45-53]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including variable reluctance sensor. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose modulating the carrier signal [Richeson, Jr. et al.: column 3: lines 45-53].

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Regarding claim 8, Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal. Richeson, Jr. et al. disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal [Fig. 7; column 14: lines 18-28]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including comparator. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose of providing an output signal indicative of substantial simultaneous occurrence of signals from both sensors [Richeson, Jr. et al.: Column 7: lines 34-67].

Regarding claims 9 and 10, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention except wherein the selected threshold is constant, and it is a function of at least one previous detected spark. Official Notice is taken that wherein the selected threshold is constant, and it is a function of at least one previous detected spark is well-known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the selected threshold is constant, and it is a function of at least one previous detected spark. The skilled artisan would have been motivated to modify

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Budde et al. and Richeson, Jr. et al. Because it is well known in the art. *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418,420 (CCPA 1970). Applicant may consider overcoming the above assertion of obviousness by demonstrating that provision of the above design achieves unexpected results relative to the prior art. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

11. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Luteran (US Patent Number 4,109,630).

Regarding claims 2 and 13, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose a delay element. Luteran disclose a delay element [column 14: lines 45-53]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. and Richeson, Jr. et al. by including a delay element. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose delaying the signal [Luteran: column 2: lines 42-43].

Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous

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occurrence of the timing mark signal and the ignition signal. Richeson, Jr. et al. disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal [Fig. 7; column 14: lines 18-28]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including comparator. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose of providing an output signal indicative of substantial simultaneous occurrence of signals from both sensors [Richeson, Jr. et al.: Column 7: lines 34-67].

12. Claims 5-7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Dickmeyer et al. (US Patent Number 5,998,988).

Regarding claim 5, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose a support tube insertable in the port and having a bore extending from a first end to a second end; a sensor housing insertable in the bore; and a variable reluctance probe disposed in the sensor housing. Dickmeyer et al. disclose a support tube insertable in the port and having a bore extending from a first end to a second end; a sensor housing insertable in the bore; and a variable reluctance probe disposed in the sensor housing [FIG. 2 - FIG. 9]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the

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teachings of Budde et al. and Richeson, Jr. et al. by including limitations mentioned above. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose protecting the sensor [Dickmeyer et al.: column 35 lines 37].

Regarding claims 6, 7, 15 and 16, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose wherein the support tube includes exterior and interior threads. Dickmeyer et al. disclose wherein the support tube includes exterior and interior threads [FIG. 2 - FIG. 9]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. and Richeson, Jr. et al. by including wherein the support tube includes exterior and interior threads. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose connecting the device together.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Berardinelli (US Patent Number 5,814,723).

Regarding claim 11, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose ignition sensor comprises a light detector. Berardinelli discloses ignition sensor comprises a light

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detector. [column 2: lines 37-54]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. and Richeson, Jr. et al. by including ignition sensor comprises a light detector. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose indicating the status of the output [Berardinelli: column 2: lines 42-43].

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wasseem Hamdan whose telephone number is (703) 305-3968. The examiner can normally be reached Monday-Thursday from 700AM-400PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Safet Metjahic can be reached on (703) 308-1436.

The fax phone number for this Art Unit is (703)305-3432 or (703)305-3431.

Any inquiry of a general nature or relating to the status of this application should be directed to the Receptionist at (703) 305-3800.

15. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

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Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry, please label

"FORMAL" and sign as attorney of record)

Or:

(703) 305-9724 (for informal or draft communications, please label

"PROPOSED" or "DRAFT" and prominently label PLEASE DELIVER

DIRECTLY TO EXAMINER)

Hand-delivered responses should be brought to Crystal Plaza 4 [fourth Floor
(Receptionist)], 2201 South Clark Place, Arlington, VA. 22202.

Wasseem H. Hamdan



January 12, 2001



Safet Metjahic
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